

User's Guide

# hp StorageWorks 30ux Standalone UDO Drive

First Edition (May 2004)

**Part Number:** AA961-90901

This guide describes procedures for operating and troubleshooting the HP StorageWorks 30ux Standalone UDO Drive.



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HP StorageWorks 30ux Standalone UDO Drive User's Guide  
First Edition (May 2004)  
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## About This Guide

This user guide provides information to help you:

- Operate the standalone UDO drive
- Troubleshoot the standalone UDO drive

“About This Guide” topics include:

- [Related documentation](#), page 6
- [Conventions](#), page 6
- [Getting help](#), page 8

## Related documentation

In addition to this guide, HP provides corresponding information:

- *HP StorageWorks Optical 30ux Standalone UDO Drive Setup Guide*
- *HP StorageWorks Optical 30ux Standalone UDO Drive Getting Started Poster*

## Conventions

Conventions consist of the following:

- [Document conventions](#)
- [Text symbols](#)

## Document conventions

This document follows the conventions in [Table 1](#).

**Table 1: Document conventions**

Element	Convention
Cross-reference links	Blue text: <a href="#">Figure 1</a>
Key and field names, menu items, buttons, and dialogue box titles	<b>Bold</b>
File names, application names, and text emphasis	<i>Italics</i>
User input, commands and directory names, and system responses (output and messages)	Monospace font COMMAND NAMES are uppercase monospace font unless they are case sensitive
Variables	<monospace, italic font>
Web site addresses	Blue underlined sans serif font text ( <a href="http://www.hp.com">http://www.hp.com</a> )

## Text symbols

The following symbols may be found in the text of this guide. They have the following meanings:



**WARNING:** Text set off in this manner indicates that failure to follow directions in the warning could result in bodily harm or death.

---



**AVERTISSEMENT :** le non-respect de ces instructions expose l'utilisateur à des risques potentiellement très graves.

---



**AVVERTENZA:** La mancata osservanza delle indicazioni fornite in un messaggio così evidenziato, può provocare lesioni personali o mettere in pericolo la vita dell'utente.

---



**VORSICHT:** In dieser Form hervorgehobener Text weist darauf hin, dass die Nichtbeachtung der Anleitungen zu Verletzungen oder zum Tod führen kann.

---



**ADVERTENCIA:** el texto con esta marca indica que si no se siguen las instrucciones, pueden producirse lesiones corporales o incluso la muerte.

---



**警告:** その指示に従わないと、人体への傷害や生命の危険を引き起こす恐れがある警告事項を表します。

---



**警告:** 以这种方式显示的文本表示: 如果不按警告中的指导信息操作, 可能会导致人身伤亡。

---



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**Caution:** Text set off in this manner indicates that failure to follow directions could result in damage to equipment or data.

---

---

**Note:** Text set off in this manner presents commentary, sidelights, or interesting points of information.

---

## Getting help

If you still have a question after reading this guide, contact an HP authorized service provider or access our web site: <http://www.hp.com>.

## HP technical support

Telephone numbers for worldwide technical support are listed on the following HP web site: <http://www.hp.com/support/>.

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**Note:** For continuous quality improvement, calls may be recorded or monitored.

---

Be sure to have the following information available before calling:

- Technical support registration or contract number (if applicable)
- Product serial numbers
- Product model names and numbers
- Applicable error messages
- Operating system type and revision level
- Detailed, specific questions
- HP StorageWorks Library & Tape Tools Support Ticket (if applicable)



## HP storage web site

The HP web site has the latest information on this product. Access storage at: <http://www.hp.com/country/us/eng/prodserv/storage.html>. From this web site, select the appropriate product or solution. You can also visit <http://www.hp.com/go/udo>.

## HP authorized reseller

For the name of your nearest HP authorized reseller:

- In the United States, call 1-800-345-1518
- In Canada, call 1-800-263-5868
- Elsewhere, see the HP web site for locations and telephone numbers: <http://www.hp.com>.



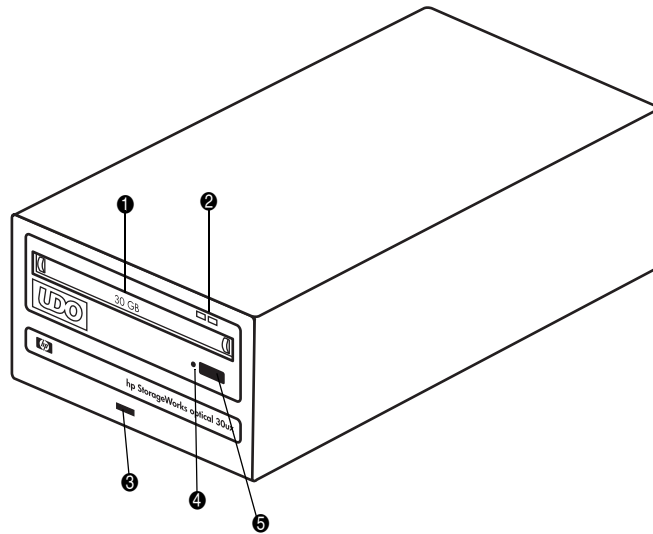
# Operations



This chapter describes the following:

- [Identifying panel features](#), page 12
- [Using Ultra Density Optical \(UDO\) disks](#), page 14
- [Using application software](#), page 22

## Identifying panel features

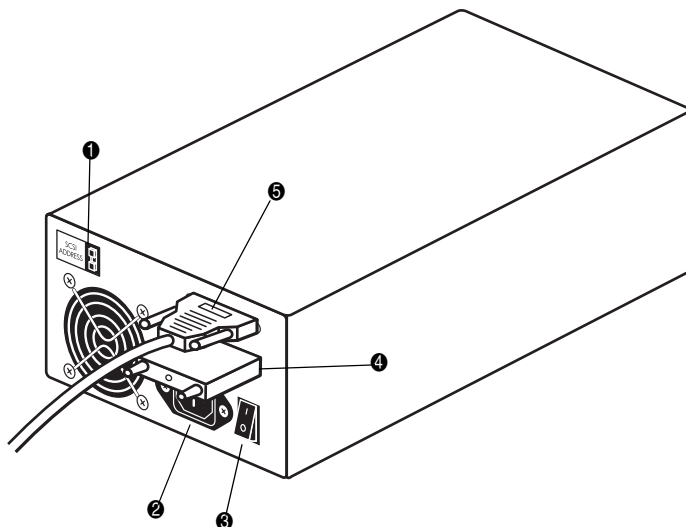


- |                      |                          |
|----------------------|--------------------------|
| ❶ Disk slot          | ❷ Eject tool access hole |
| ❸ Activity indicator | ❸ Eject button           |
| ❹ Power indicator    |                          |

**Figure 1: Front panel features**

## Front panel features descriptions

- Disk slot—The opening used to load and unload UDO media.
- Activity indicator—Lit when the drive is accessed and while the drive is loading or ejecting a disk.
- Power indicator—Remains lit while the power is on.
- Eject tool access hole—An opening for a small, flat-slotted screwdriver used to manually eject a disk in an emergency, such as a power outage.
- Eject button—Pressed to eject the disk from the drive. The drive power must be on.



- |                   |                             |
|-------------------|-----------------------------|
| ❶ SCSI ID switch  | ❹ SCSI port with terminator |
| ❷ Power connector | ❺ SCSI port with SCSI cable |
| ❸ Power switch    |                             |

**Figure 2: Back panel features**

## Back panel features descriptions

- SCSI ID switch—Used to set the SCSI ID.

---

**Note:** Be careful not to inadvertently change the SCSI ID when handling the standalone UDO drive.

---

- Power connector—Connection for the power cord.
- Power switch—Turns power to the standalone UDO drive on and off.
- SCSI port with terminator —68-pin high-density SCSI connector (Micro D-type). Cable may be attached to either connector.
- SCSI port with SCSI cable—68-pin high-density SCSI connector (Micro D-type). Terminator may be attached to either connector.

## Using Ultra Density Optical (UDO) disks

UDO media is an integral part of the storage process. This section describes the following:

- [Choosing a disk type](#), page 14
- [Labeling a disk cartridge](#), page 15
- [Write-protecting an UDO disk](#), page 16
- [Maintaining UDO media](#), page 20

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**Note:** For UDO media specifications, see “[Media specifications](#)” on page 30.

---

### Choosing a disk type

Two disk types can be used in the standalone UDO drive.

**Table 2: UDO disk types**

Disk Type	Description	HP Part Number
Rewritable	Designed for virtually unlimited read and write cycles	Q2031A
Write once, ready many times (WORM)	Designed for permanent storage of data that cannot be altered or erased	Q2030A

To order HP UDO media, contact your local HP Authorized Reseller or buy online from <http://www.hp.com/go/storagemedia>.

## Labeling a disk cartridge

Make it a practice to label your UDO disk cartridges. Adhesive labels come with each UDO disk for this purpose (see [Figure 3](#)).



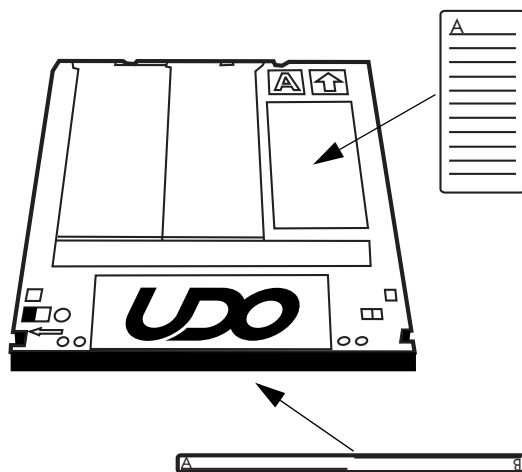
**Caution:** In order to avoid damaging the drive and media:

Only apply labels to the areas designated in [Figure 3](#). Never place labels over the disk cartridge shutter or open the shutter for any reason.

Make sure the media is free of moisture and that all label corners are securely fastened to the media shell.

Do not use disks with loosely attached labels.

Do not use disks with multiple labels applied. Always remove old labels before applying new ones.



**Figure 3: Labeling an UDO disk**

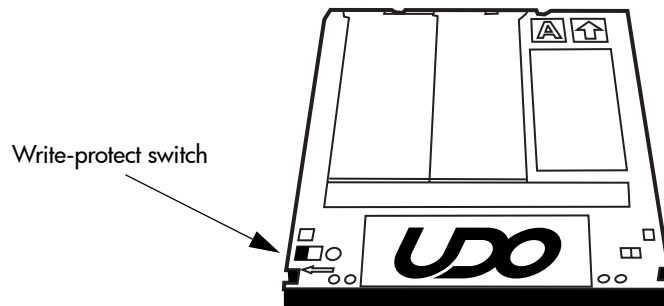
## Write-protecting an UDO disk

Each side of an UDO disk can be write-protected.

With *rewritable disks*, this prevents existing files from being altered or erased, and new files from being written to the disk.

With *WORM disks*, existing files cannot be altered or erased regardless of whether or not the disks have been write-protected. However, write-protecting a WORM disk prevents additional files from being written to the disk.

To write-protect an UDO disk, slide the red write-protect switch to the left, as indicated by the arrow on the cartridge (see [Figure 4](#)).

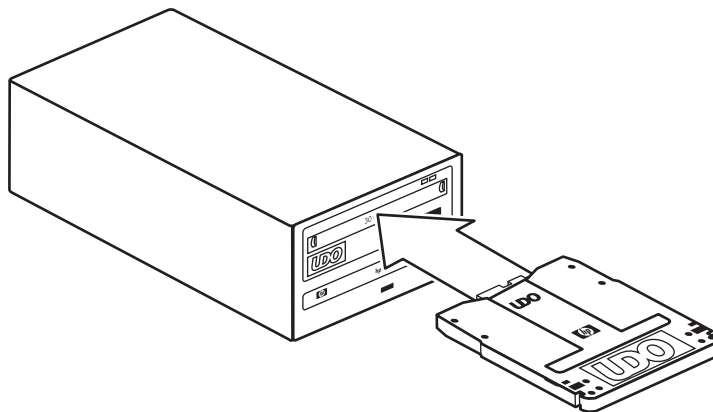


**Figure 4:** Write-protecting an UDO disk



## Loading a disk into the drive

Insert the disk gently but firmly into the opening on the front panel, shutter end first, and with the side you want to access facing up (A or B). See [Figure 5](#). The drive will automatically pull the disk fully into position.



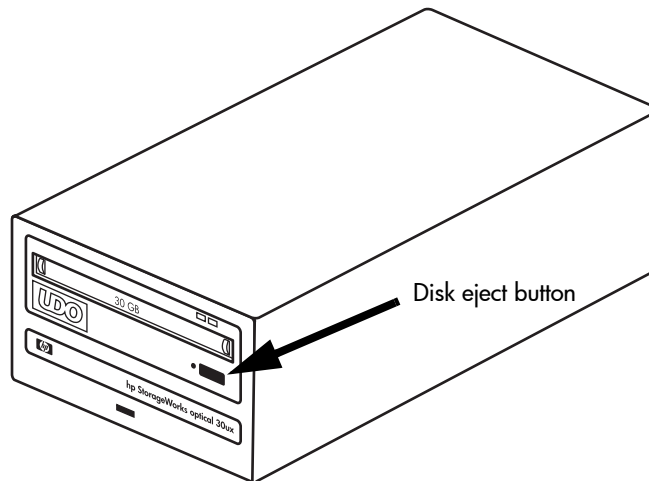
**Figure 5:** Loading an UD0 disk into the drive

## Ejecting a disk from the drive

There are two methods for ejecting disks from the drive.

### Using the disk eject button

From the drive's front panel, push the eject button located below the disk slot (see [Figure 6](#)).



**Figure 6:** Using the disk eject button

### Manually ejecting disks with power off

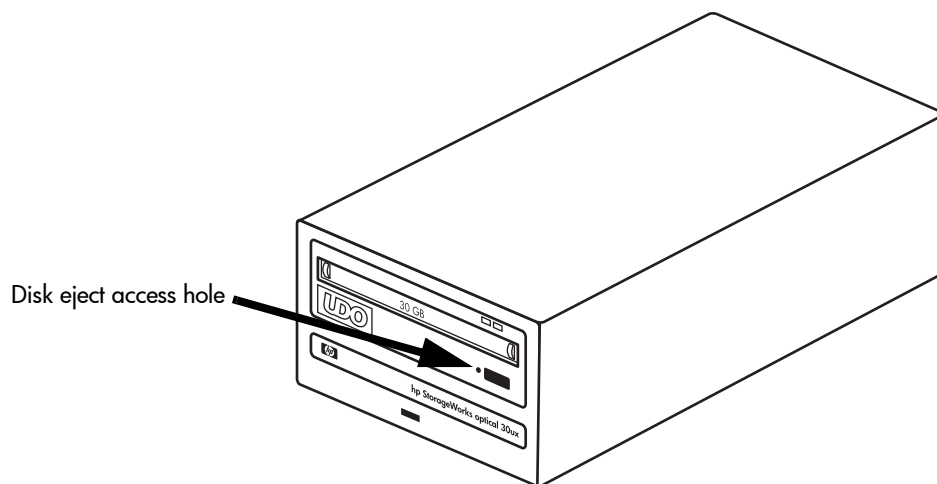
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**Note:** The procedure for manually ejecting disks should rarely be needed. Before resorting to the manual method, always attempt to eject disks using the disk eject button (see [Figure 6](#)).

---

The drive does not automatically eject a disk cartridge if a power failure occurs. To manually remove a disk from the drive:

1. Disconnect all power to the drive.
2. Insert a small, flat-slotted screwdriver into the access hole located below the disk slot on the front panel of the drive (see [Figure 7](#)). The screwdriver will engage a screw behind the access hole.



**Figure 7: Manually ejecting disks**

3. Once engaged, apply force while turning the screw in a *clockwise* direction.
4. Continue turning the screw until the disk ejects from the drive.

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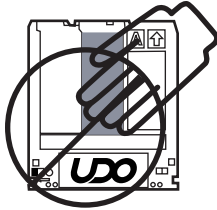
**Note:** After ejecting a disk, the drive remains in eject position until power is restored. At that time, the drive automatically resets itself.

---

## Maintaining UDO media

Follow these guidelines to ensure that your UDO disks remain in good condition.

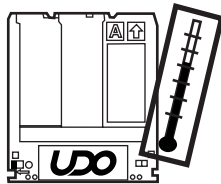
- Do not open the disk's shutter and touch the disk surface.



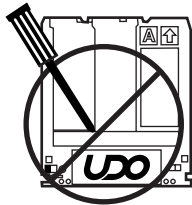
- Do not store the disk in a dusty location.



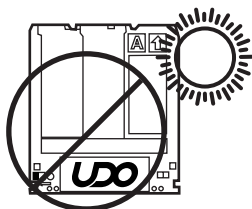
- Do not store the disk in temperatures outside of 5°C to 55°C (41°F to 122°F).



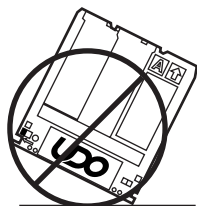
- Do not disassemble the disk.



- Do not expose the disk to direct sunlight.



- Do not drop the disk.



## Using application software

Application software is required to operate the standalone UDO drive.

---

**Note:** While HP-UX does provide native file system support for UDO media, this support is only for rewritable UDO media. Refer to the "Configuration" chapter in the *HP StorageWorks 30ux Standalone UDO Drive Setup Guide* that shipped with this product for more information.

---

## Supplied UDO driver software

MS Windows operating systems do not provide native file system support for UDO media. The standalone UDO drive ships with UDO driver software, providing UDF file system support for MS Windows operating systems, including:

- Windows 2000 Professional
- Windows XP Home
- Windows XP Professional
- Windows 2003

For detailed information on using this software package, refer to the *HP StorageWorks UDO Driver Software User's Guide*, available from the driver CD that shipped with this product.

## Additional software options

The HP StorageWorks 30ux Standalone UDO Drive supports a variety of off-the-shelf software packages to manage your storage operations. For the latest information on which application software packages are compatible with this product, visit <http://www.hp.com/go/udo>.

# Troubleshooting

## 2

This chapter describes the following:

- [Troubleshooting common problems](#), page 24
- [Using HP StorageWorks Library and Tape Tools](#), page 26

## Troubleshooting common problems

If the procedures in [Table 3](#) do not address or resolve your problem, visit <http://www.hp.com/go/udo> for additional assistance, or contact HP technical support (see “[Getting help](#)” on page 8).

**Table 3: Troubleshooting installation**

Problem	Solution
Drive will not power on	<ul style="list-style-type: none"> <li>■ Check that the power indicator light on the control panel is on. If it is not, make sure the power switch on the back panel is on.</li> <li>■ Replace the power cord.</li> </ul>
Host computer system does not recognize the drive	<ul style="list-style-type: none"> <li>■ Ensure the drive is connected and powered on. The drive must be on when booting the host computer for the drive to be recognized.</li> <li>■ If the drive is the last device on the SCSI bus, check that it has been terminated and that the maximum cable length has not been exceeded.</li> <li>■ Check SCSI ID assignments and resolve any conflicts.</li> <li>■ Ensure you are connected to the correct SCSI bus type. UDO drives are LVDS devices.</li> <li>■ If using a narrow (8-bit) HBA, make sure that all addresses are in the range 0 through 7.</li> <li>■ For Windows operating systems, use the device manager to rediscover the drive.</li> <li>■ For HP-UX, use <code>ioscan</code> to verify that the HBA and attached devices are claimed.</li> <li>■ For other operating systems, refer to the system administrators guide for diagnosing missing peripherals.</li> </ul>



**Table 3: Troubleshooting installation (Continued)**

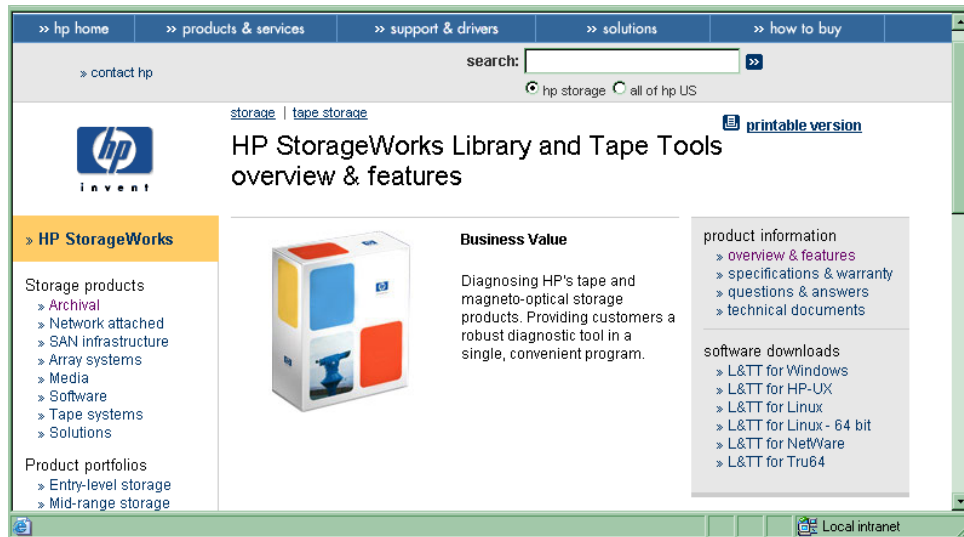
Problem	Solution
Other SCSI devices no longer work when the drive is installed	<ul style="list-style-type: none"> <li>■ Check SCSI ID assignments and resolve any conflicts.</li> <li>■ Ensure that the SCSI ID for the HBA is different from that of the drive.</li> <li>■ Check for proper SCSI cabling and termination.</li> <li>■ Ensure the maximum cable length for the bus has not been exceeded (12 meters for LVDS and 3 meters for SE).</li> </ul>

## Using HP StorageWorks Library and Tape Tools

HP StorageWorks Library and Tape Tools (L&TT) is a robust diagnostic tool for tape mechanisms, tape automation, magneto-optical and UDO products. L&TT provides functionality for firmware downloads, verification of device operation, maintenance procedures, failure analysis, corrective service actions and some utility functions. Seamless integration is provided with HP's hardware support organization through generating and emailing support tickets. The support ticket delivers a snapshot, or an in-depth view, of the storage system.

L&TT is a free download from the web and deploys in less than five minutes. It is ideal for customers who want ensured product reliability, self-diagnostics and faster resolution of device issues.

For more information, visit <http://www.hp.com/support/tapetools>.



**Figure 8: HP StorageWorks L&TT**

# Specifications



This appendix describes the following:

- [Environmental specifications](#), page 28
- [Drive specifications](#), page 29
- [Media specifications](#), page 30
- [Safety and regulatory specifications](#), page 31

## Environmental specifications

**Table 4: Environmental specifications**

Characteristic	Specification
<b>Temperature</b>	
Operating	15°C to 35°C (59°F to 95°F)
Non-operating (without media)	-40°C to 60°C (-40°F to 140°F)
Gradient	10°C (50°F) per hour
Transportation (<14 consecutive days)	-30°C to 60°C (-22°F to 140°F)
<b>Humidity</b>	
Operating	10% to 80% RH
Non-operating (without media)	5% to 90% RH
<b>Shock</b>	
Non-operating (without media)	10 cm tilt, drop test
<b>Vibration (5 to 500 Hz)</b>	
Operating	0.21 g rms
Non-operating (random)	2.1 g rms
Non-operating (swept-sine)	0.5 g (0 to peak)
<b>Power Requirements</b>	
Line voltage	100 to 240 VAC
Line frequency	50 to 60 Hz
Power consumption	50 W maximum

## Drive specifications

**Table 5: Drive specifications**

Characteristic	Specification
Disk capacity	30 GB
Average seek	35 msec
Rotational speed	<ul style="list-style-type: none"> <li>■ 2100 RPM +/- 0.5% WORM</li> <li>■ 1950 RPM +/- 0.5% Rewritable</li> </ul>
Data transfer rate (software and system dependent)	<ul style="list-style-type: none"> <li>■ Reads (max. sustained):               <ul style="list-style-type: none"> <li>— WORM, 7.96 MB/sec</li> <li>— Rewritable, 7.99 MB/sec</li> </ul> </li> <li>■ Writes (max. sustained):               <ul style="list-style-type: none"> <li>— WORM, 3.98 MB/sec</li> <li>— Rewritable, 3.99 MB/sec</li> </ul> </li> <li>■ Burst (synchronous): 40 MG/sec</li> <li>■ Burst (asynchronous, data in): 6.7 MB/sec</li> <li>■ Burst (asynchronous, data out): 40 MB/sec</li> </ul>
Disk load time	5 sec typical/
Disk unload time	3 sec typical
Read/write compatibility	Read/write UDO 1st generation format only
Interface type	SCSI LVD (68 pin)
MTBF	100,000 hours
Read/write error rate (uncorrectable)	< 1 per 10 <sup>20</sup> bytes read
Seek error rates	<ul style="list-style-type: none"> <li>■ Recoverable: &lt; 1 per 100,000 seeks</li> <li>■ Hard error seeks: &lt;1 per 10,000 seeks</li> </ul>

## Media specifications

**Table 6: Media specifications**

Characteristic	WORM Specification	Rewritable Specification
<b>General</b>		
Recording capacity	30 GB	30 GB
Archival life (recorded)	50 years	50 years
Shelf life (unrecorded)	50 years	50 years
Warranty	Limited Lifetime Warranty	Limited Lifetime Warranty
<b>Physical</b>		
Disk thickness	2.4mm (.1in)	2.4mm (.1in)
Outer diameter	130mm (5.12in)	130mm (5.12in)
Bytes per sector	8192 bytes	8192 bytes
Recording layer	Phase change	Phase change
<b>Performance</b>		
Load-unload lifetime	20,000 cycles per side	20,000 cycles per side
Overwrite capability	No	Yes
<b>Operating Environment</b>		
Operating humidity range	5°C to 55°C, 3% to 85% RH	5°C to 55°C, 3% to 85% RH
Non-operating (storage) humidity range	-10°C to 55°C, 3% to 90% RH	-10°C to 55°C, 3% to 90% RH

## Safety and regulatory specifications

**Table 7: Safety and regulatory specifications**

Description	Specification
UL Listed Mark	UL 60950 (standard for safety of information technology equipment)
TUV GS Mark (Germany)	EN60950, IEC950 (standard for safety of information technology equipment, third edition)
CE Marking (European Union)	Low Voltage Directive, 73/23/EEC, European Union
CUL Mark (Canadian UL)	CAN/CSA 22.2 No. 950 (standard for safety of information technology equipment)
Regulatory Series ID Number	N6320N1Z, Class B





# Safety and Regulatory



This appendix describes the following safety and regulatory information for the United States, Finland, Sweden, Germany, United Kingdom, European Union, and Japan:

- [Federal Communications Commission Notice](#), page 34
- [Canadian Notice \(Avis Canadien\)](#), page 35
- [European Union Notice](#), page 36
- [United Kingdom Telecommunications Act 1984](#), page 36
- [Herstellerbescheinigung](#), page 37
- [English translation of German sound emission directive](#), page 37
- [Turvallisuusyhteenveto](#), page 37
- [English translation of Finland regulatory information](#), page 38
- [BSMI notice](#), page 41
- [Japanese Notice](#), page 42
- [Laser Device](#), page 42
- [CDRH regulations \(USA only\)](#), page 43

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**Note:** In addition to the safety information in this appendix, also refer to the *HP Safety Guide* that shipped with your product.

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## Federal Communications Commission Notice

Part 15 of the Federal Communications Commission (FCC) Rules and Regulations has established Radio Frequency (RF) emission limits to provide an interference-free radio frequency spectrum. Many electronic devices, including computers, generate RF energy incidental to their intended function and are, therefore, covered by these rules. These rules place computers and related peripheral devices into two classes, A and B, depending upon their intended installation. Class A devices are those that may reasonably be expected to be installed in a business or commercial environment. Class B devices are those that may reasonably be expected to be installed in a residential environment (that is, personal computers). The FCC requires devices in both classes to bear a label indicating the interference potential of the device as well as additional operating instructions for the user.

The rating label on the device shows which class (A or B) the equipment falls into. Class B devices have an FCC logo or FCC ID on the label. Class A devices do not have an FCC logo or FCC ID on the label. Once the class of the device is determined, refer to the following corresponding statement.

### Class B Equipment

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

## Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Hewlett-Packard Company may void the user's authority to operate the equipment.

## Cables

Connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods in order to maintain compliance with FCC Rules and Regulations.

## Declaration of Conformity for products marked with the FCC logo - United States only

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For questions regarding this FCC declaration, contact:

Hewlett-Packard Company  
Regulatory Engineer, MS E-200  
825 14th Street S.W.  
Loveland, CO 80537

Or, call

(970) 898-1738

To identify this product, refer to the Part, Series, or Model number found on the product.

## Canadian Notice (Avis Canadien)

### Class B Equipment

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

## European Union Notice



Products bearing the CE marking comply with the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community and if this product has telecommunication functionality, the R&TTE Directive (1999/5/EC).

Compliance with these directives implies conformity to the following European Norms (in parentheses are the equivalent international standards and regulations):

- EN 55022 (CISPR 22) - Electromagnetic Interference
- EN55024 (IEC61000-4-2, 3, 4, 5, 6, 8, 11) - Electromagnetic Immunity
- EN61000-3-2 (IEC61000-3-2) - Power Line Harmonics
- EN61000-3-3 (IEC61000-3-3) - Power Line Flicker
- EN 60950 (IEC 60950) - Product Safety

## United Kingdom Telecommunications Act 1984

The Hewlett-Packard UDO products are approved under Approval Number NS/G/1234/J/100003 for indirect connection to Public Telecommunication Systems within the United Kingdom.

## Herstellerbescheinigung

Diese Information steht im Zusammenhang mit den Anforderungen der Maschinenlärminformationsverordnung vom 18 Januar 1991.

Schalldruckpegel  $L_p < 70 \text{ dB(A)}$

- am arbeitsplatz
- normaler betrieb
- nach ISO 7779:1988/EN 27779:1991 (Typprüfung)

## English translation of German sound emission directive

This statement is provided to comply with the requirements of the German Sound Emission Directive, from 18 January 1991.

Sound pressure  $L_p < 70 \text{ dB(A)}$

- at operator position
- normal operation
- according to ISO 7779: 1988/EN 27779: 1991 (type test)

## Turvallisuusyhteenveto

### Laserturvallisuus

LUOKAN 1 LASERLAITE

KLASS 1 LASER APPARAT

Hewlett-Packard optiset levymuistiasemat ovat käyttäjän kannalta turvallisia luokan 1 laserlaitteita. Normaalissa käytössä levymuistiaseman kotelointi estää lasersäteen pääsyn laitteen ulkopuolelle.

Laitteen turvallisuusluokka on määritetty standardin EN 60825 mukaisesti.

**VAROITUS !**

Laitteen käyttäminen muulla kuin käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle lasersäteilylle.

### **VARNING !**

Om apparaten används på annat sätt än i bruksanvisning specificerats, kan användaren utsättas för laserstrålning, som överskrider gränsen för laserklass 1.

## **Huolto**

Hewlett-Packard levymuistiasemien sisällä ei ole käyttäjän huollettavissa olevia kohteita. Laitteen saa avata ja huoltaa ainoastaan sen huoltamiseen koulutettu henkilö. Levymuistiaseman sisälle asennettujen luku-/kirjoitusyksiköiden suojakotelo ei tule avata huoltotoimenpiteiden yhteydessä.

### **VARO !**

Mikäli luku-/kirjoitusyksikön suojakotelo avataan ja suojalukitus ohitetaan, olet alttiina lasersäteilylle laitteen ollessa toiminnassa. Älä katso säteeseen.

### **VARNING !**

Om skyddshöljet av den optiska drivmodulen öppnas och spärren urkopplas då apparaten är i funktion, utsättas användaren för laserstrålning. Betrakta ej strålen.

Tiedot luku-/kirjoitusyksikössä käytettävän laserdiodin säteilyominaisuuksista:

Aallonpituus 660 nm

Teho 60 mW

Turvallisuusluokka 3B

## **English translation of Finland regulatory information**

### **LASER SAFETY SUMMARY**

#### **LASER SAFETY**

#### **CLASS 1 LASER PRODUCT**

Hewlett-Packard jukeboxes are for user safe class 1 laser products. In normal use the enclosure of the optical drives prevents the laser beam from escaping outside of the product.

The jukebox was type approved in Finland for laser safety by the National Board of Labour Protection. The safety class of the products was defined according to the resolution No 472/1985 of the Council of State and the standard EN 60825.



**WARNING:** The use of the product otherwise than specified in the user's manual may expose the user to laser radiation exceeding safety class 1.



**AVERTISSEMENT :** l'utilisation de ce produit de façon non conforme à ce qui est indiqué dans le manuel de l'utilisateur peut exposer l'utilisateur à des rayonnements laser dangereux excédant les normes de sécurité établies pour les matériels appartenant à la Classe 1.



**AVVERTENZA:** Il mancato rispetto delle indicazioni sull'utilizzo del prodotto riportate nel manuale dell'utente, potrebbe esporre l'utente a radiazioni laser superiori alla Classe 1 di sicurezza.



**VORSICHT:** Bei unsachgemäßer Nutzung des Produkts (nicht gemäß der Ausführungen im Benutzerhandbuch) kann der Benutzer Laserstrahlung ausgesetzt werden, die die Grenzwerte der Laserschutzklasse 1 übersteigt.



**ADVERTENCIA:** un uso del producto distinto de los especificados en la guía de usuario puede producir una exposición peligrosa del usuario a las radiaciones superando el nivel de seguridad 1.



**警告:** ユーザーマニュアルの記載内容と異なる製品の使用により、クラス 1 の安全基準を超えるレーザー放射にさらされるおそれがあります。



**警告:** 如果没有按照用户手册中的规定使用本产品，用户可能会受到超过 1 级安全的激光辐射。

## SERVICE

There are no user serviceable parts inside the jukebox. The jukebox products can be serviced only by qualified service personnel. The optical drive mechanism(s) installed inside the library system shall not be opened or disassembled during service.



**WARNING:** If the enclosure of the optical drive mechanism is opened and the safety interlock disabled, you may be exposed to the laser radiation when the drive is operating. Avoid exposure to the beam.

---



**AVERTISSEMENT :** si le boîtier du mécanisme d'entraînement optique s'ouvre et que le verrou de sécurité est désactivé, vous risquerez d'être exposé aux rayons laser lors du fonctionnement de l'unité. Évitez de vous exposer au faisceau.

---



**AVVERTENZA:** Se il contenitore del meccanismo dell'unità ottica è aperto e il meccanismo di blocco di sicurezza è disabilitato, è possibile che l'utente sia esposto a radiazioni laser durante il funzionamento dell'unità. Evitare l'esposizione al raggio.

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**VORSICHT:** Wenn das Gehäuse des optischen Laufwerks geöffnet wird und die Sicherheitssperre deaktiviert ist, können Sie bei Betrieb des Laufwerks Laserstrahlung ausgesetzt werden. Vermeiden Sie es, sich dem Laserstrahl auszusetzen.

---



**ADVERTENCIA:** si el receptáculo del mecanismo de la unidad óptica se abre y se desactiva el interbloqueo de seguridad, es posible que se exponga a la radiación de láser cuando la unidad esté funcionando. Evite la exposición al rayo.

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**警告：** オプティカルドライブ装置のエンクロージャを開き、安全インターロック機構を解除した場合、ドライブの動作中にレーザー放射にさらされるおそれがあります。ビームに当たらないようにして下さい。



**警告：** 如果打开了光驱装置，并且安全互锁失去作用，则用户在使用光驱时可能会受到激光辐射。请避免身体的任何部位暴露在激光光束之下。

The information about the radiation characteristics of the laser diode used in the optical drive mechanism:

Wavelength 680 nm

Power 60 mW

Class 3B laser

## BSMI notice

**檢磁3902H044**

**警告使用者：**  
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

**檢磁3902H047**

**警告使用者：**  
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

**檢磁3902H048**

**警告使用者：**  
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

## Japanese Notice

ご使用になっている装置にVCCIマークが付いていましたら、次の説明文をお読み下さい。

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。  
取扱説明書に従って正しい取り扱いをして下さい。

VCCIマークが付いていない場合には、次の点にご注意下さい。

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

## Laser Device

All HP systems equipped with a laser device comply with safety standards, including International Electrotechnical Commission (IEC) 825. With specific regard to the laser, the equipment complies with laser product performance standards set by government agencies as a Class 1 laser product. The product does not emit hazardous light; the beam is totally enclosed during all modes of customer operation and maintenance.

## Laser Safety Warnings



**WARNING:** To reduce the risk of exposure to hazardous radiation:

Do not try to open the laser device enclosure. There are no user-serviceable components inside.

Do not operate controls, make adjustments, or perform procedures to the laser device other than those specified herein.

Allow only HP authorized service technicians to repair the laser device.

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## CDRH regulations (USA only)

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration implemented regulations for laser products on August 2, 1976. These regulations apply to laser products manufactured from August 1, 1976. Compliance is mandatory for products marketed in the United States. The labels and artwork shown below indicate compliance with CDRH regulations and must be attached to laser products marketed in the United States.



**WARNING:** Use of controls or adjustments, or performing procedures other than those specified in this manual may result in hazardous laser radiation exposure.

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**Note:** Complies with 21 CFR Chapter 1 Subchapter J.

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Laser Class Information: A black on yellow label which reads, “Class 1 Laser Product” printed in English, French, German, Finnish, Japanese, and Spanish.

## Compliance with International Regulations

All HP systems equipped with laser devices comply with appropriate safety standards, including IEC825.



## Glossary

This glossary defines terms used in this guide or related to this product and is not a comprehensive glossary of computer terms.

### **cartridge**

A plastic enclosure that contains an optical disk. The cartridge is labeled “A” or “B” to denote separate sides of the optical disk. The optical disk is never removed from the cartridge.

### **driver**

A program that allows the operating system to communicate with a peripheral device.

### **multifunction drive**

An optical disk drive that supports both rewritable and WORM optical disks. The drive detects the disk type by reading a factory-stamped code on the disk, and automatically determines whether to operate in rewritable or WORM mode.

### **optical disk**

A term synonymous with the 5.25-inch optical disk. There are two types of optical disks: rewritable and WORM.

### **rewritable optical**

An optical disk technology in which data can be repeatedly written using optical reading and writing technology.

### **SCSI**

An acronym for the Small Computer Systems Interface.

### **terminator**

A resistor array device used for electrically terminating a SCSI bus. A SCSI bus must be terminated at its two physical ends. A peripheral device uses a terminator only if it is at the end of the bus.

**ultra density optical**

UDO (Ultra Density Optical), like HP's DVD+RW, uses Phase Change technology in order to achieve increased data density on a 130mm disk. Phase Change technology uses a laser to read and write from the active layer on the disk. The recording process uses the laser to heat each data bit to a specific temperature. One temperature allows the bit to form a crystalline (reflective) mark and a different temperature allows the bit to form an amorphous (less reflective) mark. Data is read by using a low power laser beam to detect the difference in the levels of reflectivity recorded on the disk.

**write-once or WORM**

An additional operating mode available with multifunction drives. When a write-once (WORM) disk is inserted, the drive will write data, but will not write over data that has been previously written. This feature is useful for applications that need permanent data security and audit trails.

**write-protect**

A feature that prevents data from being written to a disk. A write-protect tab is located on both sides of the optical disk cartridge to enable write-protection on one or both surfaces of the disk.

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